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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/590,182	08/18/2006	Heikki Raisanen	HEIN 22.733 (100720-00061)	4071
26304 7590 12/06/2007 KATTEN MUCHIN ROSENMAN LLP 575 MADISON AVENUE NEW YORK, NY 10022-2585			EXAMINER UHLIR, CHRISTOPHER J	
			ART UNIT 2837	PAPER NUMBER
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

**Application No.**

10/590,182

**Applicant(s)**

RAISANEN, HEIKKI

**Examiner**

Christopher Uhler

**Art Unit**

2837

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on 18 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 August 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>08/18/2006 and 09/27/2006</u> .                               | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Drawings*

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the following limitations must be shown or the features canceled from the claim(s).

- Electret bubble film as in claim 6
- Electronic switching circuit as stated in claim 7
- Processor as stated in claim 8
- Display as described in claims 11 and 12
- Piezoelectric material as in claim 13

No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an

application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include reference character 95, which is not mentioned in the description. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Objections***

3. Claims 4 and 5 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claims, or amend the claims to place the claims in proper dependent form. These claims recite only specific function of previous

limitations and lacks structure. Language that suggests or makes optional but does not require steps to be performed or does not limit a claim to a particular structure does not limit the scope of a claim or claim limitation. See MPEP § 2106 C.

***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claim 5 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The specification does not properly give reference to the batteries of the control device, nor does it explain the process of charging said batteries through the electric charge generated through pressing the transducer film, as stated in claim 5. Further, this claim is interpreted as directed toward a method of charging a battery when contact is made with electrodes positioned on the outer surface.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claim 8 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. This claim recites the limitation "electronic coupling circuit as

claimed in claim 7" in the preamble of this claim. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1-3, 7, and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Hudak (US 5,731,535).

**Regarding claim 1**, Hudak discloses an electromechanical control unit for a musical instrument having a touch pad area or proximity sensor for controlling a signal processing unit (column 2 lines 16-19). The control unit contains surface elements or markings 38 having symbols, which change the values of said signal processing unit such as volume (column 3 lines 40-43) or vibrato, through touching the discrete sensitive areas (column 2 lines 60-65).

Said control unit is further disclosed to consist a thin and elastic layer or flexible circuit board 44 located on the inside portion of the sidewall 36 (column 3 lines 55-58), where touching said control unit generates a capacitance change in order to adjust the signal processing unit (column 2 lines 4-8). Hudak further discloses the use of electrodes or electrically conductive material to properly sense a user's touch or

proximity (column 2 lines 1-5). Although not explicitly discloses, the electromechanical control unit would require the use of a microprocessor to properly adjust the signal processing unit.

**In reference to claim 2**, Hudak discloses a control unit as stated above where a sensor matrix element is disclosed having touch sensitive areas or copper pads 68, coupled to resistors and capacitors (column 5 lines 13-17) as can be seen from Fig. 7, and further coupled to preamplifiers as shown in Fig. 8 (column 2 lines 47-49).

**In reference to claim 3**, Hudak discloses a control unit as stated above where the signal processing unit is controlled through different preamplifiers in order to produce parameters with different degrees of intensity (column 3 lines 4-8).

**In reference to claim 7**, Hudak discloses a control unit as stated above having an electronic switching circuit or latching analog circuit 60 connected to an equalization circuit 64, applied in the signal processing unit, as can be seen from Fig. 4.

**In reference to claim 10**, Hudak discloses a control unit as stated above where said control unit is further disclosed to consist a thin and elastic layer or flexible circuit board 44 (column 3 lines 55-58).

### ***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.



11. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hudak (US 5,731,535) in view of Bard et al. (US 5,793,032). Hudak discloses a control unit as stated above, but fails to disclose that pressing contact with the electrodes provides a method of charging the batteries.

However Bard et al. teaches a method of charging a battery when contact is made with an electrode (column 9 lines 29-33).

Given the teachings of Bard et al., it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the control unit disclosed by Hudak with a method of charging batteries when pressing contact is made with the electrodes. Doing so would provide a method which would prevent frequent replacement of batteries, therefore requiring less maintenance.

12. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hudak (US 5,731,535) in view of Ojala et al. (US 5,917,437). Hudak discloses a control unit as stated above but fails to disclose an electromechanical film being an electret bubble film.

However Ojala et al. teaches a control unit which uses an electret bubble film (column 1 lines 25-27).

Given the teachings of Ojala et al., it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the control unit disclosed by Hudak with an electromechanical film being an electret bubble film. Doing so would



provide a good electromechanical converting means that is naturally lightweight and flexible, as taught by Ojala et al. (column 1 lines 43-46).

13. Claims 4, 8, 9, and 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hudak (US 5,731,535) in view of Ludwig (US 2002/0005108 A1).

**In reference to claim 4**, Hudak discloses a control unit as stated above but fails to explicitly disclose that the operation of the pressing area can be affected based on a user's pressing force.

However Ludwig teaches a musical instrument system having a control unit in which impact or pressure sensors are used (page 1 ¶ [0019]).

Since these references pertain to control units on a musical instrument system, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the control unit disclosed by Hudak with pressure sensors able to affect the operation of a pressed area as taught by Ludwig. Doing so would provide an advanced expressive control system for a musical instrument system which can use effects and sounds of other instruments, as taught by Ludwig (page 11 ¶ [0247]).

**In reference to claim 8**, Hudak discloses a control unit as stated above but fails to explicitly disclose the use of a processor to adjust the gain of the preamplifiers.

However Ludwig teaches the use of processors to output parameter streams such as gain of a given signal (page 12 ¶ [0257]) in a musical instrument system having a control unit.

Since these references pertain to control units on a musical instrument system, it would have been obvious to one of ordinary skill in the art at the time the invention was

made to modify the control unit disclosed by Hudak with a processor for adjusting the gain of the preamplifiers, as taught by Ludwig. Doing so would provide an effective and reliable method of changing signal parameters of the musical instrument system.

**In reference to claim 9**, Hudak discloses a control unit as stated above but fails to disclose a temperature measurement means.

However Ludwig teaches a musical instrument system having a control unit in which sensors are used to detect and measure temperature (page 10 ¶ [0218]).

Since these references pertain to control units on a musical instrument system, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the control unit disclosed by Hudak with a temperature measurement means as taught by Ludwig. Doing so would provide a reliable control unit for a musical instrument system which can prevent overheating of the system by early detection.

**In reference to claims 11 and 12**, Hudak discloses a control unit as stated above but fails to disclose a thin and elastic display arranged on the outer surface.

However Ludwig teaches a musical instrument system having a control unit where a two-dimensional-sensing see-through touch-screen can be used (page 10 ¶ [0222]). These touch screens display operation functions and menus, and are known to be thin and elastic-like for proper sensing. Further, said touch screens would be positioned on an outer surface in order to efficiently used.

Since these references pertain to control units on a musical instrument system, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the control unit disclosed by Hudak with a thin and elastic display

arranged on the outer surface as taught by Ludwig. Doing so would provide an easily usable control unit on a musical instrument system which can "very easily capture very expressive finger nuances" as taught by Ludwig (page 10 ¶ [0222]).

14. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hudak (US 5,731,535) as modified by Ludwig (US 2002/0005108 A1) as applied to claims above, further in view of Katsuki et al. (US 2003/0011577 A1). Hudak modified by Ludwig discloses a control unit for a musical instrument system using a touch screen as stated above but fails to disclose an electromechanical response based on piezoelectric material arranged in a film.

However Katsuki et al. teaches a touch screen using piezoelectric thin film (page 1 ¶ [0002]).

Given the teachings of Katsuki et al., it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the control unit disclosed by Hudak as modified by Ludwig with a touch screen having a piezoelectric film. Doing so would provide a touch panel control unit on a musical instrument system that can "detect a touched position with sufficient resolution and accuracy without requiring high accuracy in the process for forming the piezoelectric film" as stated in Katsuki et al. (page 1 ¶ [0014]).

### **Conclusion**

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. A list of pertinent prior art is attached as form 892.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher Uhler whose telephone number is 571-270-3091. The examiner can normally be reached on Monday-Thursday 8:00am-6:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lincoln Donovan can be reached on 571-272-1988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Christopher J Uhler  
December 3, 2007

